Nutrition News and Views

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WHAT'S TRUE ABOUT FLU? Part 1

By Judith A. DeCava, CNC, LNC

Influenza ('flu') is medically defined as "a contagious viral infection mainly affecting the nose, throat, airways, and lungs." There are several strains of viruses (classified as type A, B, or C) blamed for causing flu. Each strain can mutate and change frequently. Type A is most common and found in many animals (such as chickens, ducks, and pigs) as well as humans. It's credited with causing the worst kinds of flu. Type B is said to cause milder cases of flu. Type C hasn't been associated with causing the annual plague of flu. A common cold is not considered to be flu. 'Stomach flu' is not influenza.

Flu comes around every year, usually from November to March in our part of the world. Symptoms (fever, headache, muscle aches, cough, runny nose, fatigue) are uncomfortable but usually not dangerous. Yet certain people—like those older than 65 or younger than 5, pregnant women, and those with lung, heart, or other chronic conditions—are at higher risk of serious complications. It's estimated that 5% to 20% of people get 'infected' every flu season. Each year the flu is blamed for 200,000 hospitalizations and 36,000 deaths in the US. The best defense against influenza, we are told, is the flu vaccine. [1] What's true about flu?

Do I have the flu? Many flu cases are not really flu. You could have a bad cold, but if it occurs during flu season, it will invariably be diagnosed as flu. Many people have "influenza-like illness" which is attributed to viruses other than flu viruses. Or they have "respiratory syncytial virus" (RSV) which produces complaints *like* flu, thus causing "confusion." Doctors usually diagnose flu on the basis of whether it's occurring in the community and whether symptoms come close to the current pattern. Rarely is laboratory testing used to identify the virus. Subacute (develops at a moderate rather than fast pace) carbon monoxide poisoning is often mistaken for flu since the symptoms are similar. Sudden increases in air poisoning (pollution) create illness mistaken for flu. So you probably don't know if you have flu. [2]

What about the statistics? No one really knows how many people actually get the flu or how many die of it. A computer-generated hypothesis is used and reported as fact. Since the 1990s, the annual number of guessed deaths has been 36,000. The deaths are not equally spread across age groups. The elderly are hardest hit; **90%** of those who die are over 65. It may be more accurate to say they die *with* a flu-like illness, not die *of* flu. This is because of underlying complications such as respiratory or cardiovascular diseases that existed before 'coming down with' flu. Chronic illness means there is an already-stressed or compromised immune system (and possibly respiratory tract), making it harder to deal with a cold or flu. About 20% of children and 5% of adults develop symptoms of flu each year. How things go is affected by age, smoking, other existing illnesses or diseases, medications that can affect the immune system, or other stressors such as pregnancy. It's scary to think of 36,000 people dying each year from flu. But if deaths from pneumonia are removed, the real number is

closer to 750. In other words, people already in poor health who develop flu-like symptoms (whether or not they have flu) advance to pneumonia, die, and are counted as flu deaths. The number of deaths can be estimated, but "it is another problem entirely to determine what proportion is actually due to influenza," says David M Morens, MD. The number of *reported* influenza deaths has remained about the same or has increased during the last few decades despite the fact that the number of people receiving flu vaccines has substantially gone up. [3]

Don't scientists know whether it's flu or what type of flu it is? Dr Maria Zambon (who works in an influenza lab) wrote, in a *Lancet* commentary, that predicting the outcome of the flu "remains an inexact and observational science…observations for one viral subtype might not hold for another." Flu strains are diverse and change every year. The **vaccine** "weapon" (another medical war) "is woefully unsophisticated." The virus is blamed for this. "Influenza is caused by an unintelligent, unstable virus," says Dr Kennedy Shortridge. The virus is not only stupid, but evidently immoral: "The virus' instability is genetically based and goes hand-in-hand with its polygamous behaviour." A lack of fidelity, it seems. "Influenza research is a continuing detective story, with all the intrigue of an Agatha Christie novel." Though the flu virus is called unintelligent, scientists speak of its high rate of change in which it evolves "rapidly to evade recognition" by the host's immune system. At least it's smart enough to find a disguise. Detective stories have a solution, but so far, medically, the flu does not.

Each February, scientists from the World Health Organization (WHO) meet to define the three most likely flu viruses that might hit the following fall and winter. Once they decide, the vaccine for that flu season is formulated on that basis. These experts "often get it wrong." Even if they guess the correct strain, not everyone responds with the antibodies that supposedly fend off the flu. As many as 40% of people over age 65, for example, don't respond to vaccines as far as antibodies go. Studies by the Centers for Disease Control (CDC) showed that each year virtually the same percentage of people suffer from flu-like illness—whether they are vaccinated or not. The researchers concluded that the vaccine "[w]as not effective or had very low effectiveness." Besides being ineffective, typical ingredients in the flu vaccines include toxins such as aluminum hydroxide, thimerosal (mercury-based toxin), and phenol (a potential carcinogen), among other additives.

In many undeveloped regions, flu is not seasonal. It occurs year-round and "often manifests as pneumonia." Is it flu or pneumonia? I'm confused. Perhaps in developed countries like ours, it's a bad cold if it occurs in April, but flu if it occurs in November. [4]

Shouldn't we prepare for the predicted flu pandemic? For many years, scientists have been saying we're due for a pandemic that mimics the 1918 flu pandemic which accounted for an estimated 40-100 million deaths worldwide. A virus or germ is predicted to emerge that will cause much illness and mayhem. "However," explains Dr John Burndage who works in medical surveillance, "outside of highly controlled laboratory settings," the characteristics of most such diseases "are much more complex than implied by a simple 'one germ, one disease' model" because the effects of viruses or bacteria—"particularly influenza viruses"—

modify the effects of other viruses and bacteria. Put another way, in real life with real people in real circumstances, no one can predict what will happen. Linking a specific 'germ' with a specific illness is not really possible. The plan to stop future flu pandemics, as adopted by the WHO "may be flawed," according to some researchers. There is controversy. Jeremy Berg, director of the US National Institute of General Medical Sciences, says: "If the controversy illustrates anything, it's that we still know very little about how pandemics start." A Cochrane review found that vaccines and anti-viral drugs will not be enough to stop a viral epidemic, **if** and when one breaks out. Still, the prestigious journal, *Science*, did mention a positive note: "With such a wide range of viruses causing a multitude of human and animal diseases, there remains a lucrative market for drugs that can target multiple classes of viruses and hence boost the current armory of antiviral therapies." Drug companies may be happy, but I'm not. [5]

How about examples of recent flu pandemics? One is the **avian** or bird flu (**H5N1** in medical parlance), a type A. It's been a concern since 1997; by 2006 there was worry that the "pandemic H5N1 influenza could escape human control." In 1997 chickens were the principle source of the virus, particularly in China and Hong Kong. Then it started showing up in various countries. Some scientists attributed the spread to migratory birds, but others disagreed. If migratory birds were the carriers, outbreaks would have occurred along their migratory routes. But they didn't. The more likely explanation is industrialized chicken farms. The virus quickly disappears in areas where there aren't any industrial confinement facilities. Researchers identified unhealthy, toxic chicken farms as the sector most vulnerable. The spread of bird flu was increasingly suspected to be "not entirely governed by nature, but by the human activities of commerce and trade." For at least 50 years milder strains of the virus were found in wild and domesticated birds, yet the virus never caused problems before. By 2008 the 5-year human death toll attributed to avian flu amounted to 243. Tragic but not even close to the usual 500,000 deaths worldwide blamed on ordinary seasonal flu. National Institutes of Health (NIH) researchers point out that the bird flu virus has yet to cross the species barrier. It seems to spread only from direct contact with infected birds, but there was concern that the virus could mutate into a form that could be transmitted from human to human. This hasn't happened. Experts say the virus would need to accumulate many genetic mutations to adapt to human hosts. Plus no serology studies were conducted to determine the infection rate of those living in the area of the 243 who died—who had this flu was not verified. Of the 200,000,000 birds that died, 99.9% were due to official extermination, not flu. Dr Marc Siegel, New York University School of Medicine, remarked, "The fear of bird flu has become particularly virulent. There is a vaccine for this fear: it is called information with perspective." The most likely explanation for bird flu is filthy, overcrowded, unnatural, stressful conditions in confinement operations for raising chickens. Government veterinarians privately thought this was the case when they looked into an outbreak of bird flu which decimated poultry operations in the Shenandoah Valley in 2003. [6]

Another example is the recent **swine** flu (medically, **H1N1** virus—the "H" and "N" referring to particular versions of two proteins, hemagglutinin and neuraminidase), a new type A. Flu viruses have few genes; H1N1 possesses 8. Two genes came from birds, three from swine,

two from other swine, and one from humans. This virus was predicted to cause the pandemic of the century. It was supposed to be particularly virulent because it was new and people would have no immunity against it. This didn't happen. Actually, H1N1 strains have been circulating in humans for a long time, at least back to the early 1900s. This "novel form" was considered unusually dangerous. Unlike seasonal flu, people over age 60 were not supposed to be affected. But some were. Young children and pregnant women were considered at high risk. The H1N1 flu felt a lot like seasonal flu—maybe milder—but often with gastrointestinal issues like vomiting and diarrhea. Severity was linked to underlying disease. In other words, if a person was already sick, he/she was at higher risk of more serious complications. That's true of any flu. H1N1 seemed to be less efficiently transmitted by respiratory droplets (sneezing, coughing) than is attributed to regular influenza.

Experts think the virus originated in Mexico. In May 2009 the world was warned to "expect further deaths" than the initial ones in Mexico. The number of those "infected" was predicted to increase and expand. A team of scientists collaborating for the WHO said there could be a huge pandemic outbreak with impact on human health difficult to quantify. People began to panic. By June 29, 2009, worldwide there were 71,000 reported cases of H1N1 with 311 deaths. More panic. Then it was admitted that the flu's outbreak "seems to have prompted a lower threshold for diagnosis of influenza in patients presenting with non-specific symptoms." **Translation**: people were diagnosed with H1N1 when there was no evidence that's what they had. Early on, in April 2009 it was reported that, "176 people have been killed in Mexico." Soon after, lab analysis showed only 7 deaths could be blamed on H1N1. A week later the official toll was only 19. Similarly, in late April 2009 in New York City, several hundred children were categorized as having H1N1 flu; but none of the cases was verified by a lab test. In June 2009 the WHO stated that **all** cases of common flu would be categorized as H1N1. In July 2009, the CDC ceased tracking individual cases. They advised states to stop testing for the virus because there was no need for confirmation of actual cases since the epidemic was obviously underway. But many states continued to test for H1N1 anyway. In most states, between 83% and 98% of reported cases were **not** H1N1 and not even flu at all. Most were either colds or upper respiratory problems caused by something else.

Dr Len Saputo and Byron Belitsos explain that, although flu viruses mutate quickly, there was no evidence that a more virulent strain of H1N1 would evolve. It would be "highly unlikely." What's more likely is that which is commonly seen with seasonal flu viruses: they become less virulent. As the world was becoming more afraid of this flu, Mexicans were blaming local pig farms and their poor levels of hygiene. In particular, local plants of Smithfield Foods, the world's largest pork packer and hog producer, were suspected. The outbreak was believed to have started in the town of Perote, Veracruz, Mexico. Residents were concerned that the pig-breeding farm there (where 950,000 hogs a year are raised) polluted the atmosphere and local water supplies. Smithfield also owns a million-pig operation near La Gloria, Mexico, where flu was first detected. It was felt that conditions there—"horrifically unsanitary"—made it possible for the virus to arise. Also, the widespread use of modified live and genetically-engineered viral vaccines in pigs raised questions about mutations and genetic exchanges

between virus strains and different species. The overcrowding, extreme confinement, and unsanitary conditions of factory farms stresses pigs' immune systems as do the use of drugs and nutritional deficiencies. The toxic results are none to healthful for humans in the vicinity.

By January 2010, the so-called pandemic and panic subsided. According to the CDC, between April 2009 (when this flu first emerged) and March 12, 2010 an estimated 12,000 North Americans died from the H1N1 swine flu. This was a lot less lethal than the ordinary seasonal flu with its estimated 36,000 deaths each year. "If this turns out to be the weakest pandemic in history, as it currently appears," wrote Dr Jeremy Laurance, "it will pose some tough questions for the scientific community." Epidemiologist Wolfgang Wodarg, MD, chairman of the European Council's Health Committee, followed the H1N1 virus pandemic story. He concluded: "We have had a mild flu—and a false pandemic." [7]

Didn't the H1N1 flu vaccine prevent a pandemic? In August 2009, the President's council of Advisors on Science and Technology highlighted a "plausible scenario" that the H1N1 virus could infect up to half the US population during the following 6 months and kill as many as 90,000 people. In September 2009, the WHO referred to the H1N1 virus as "unstoppable," and called on all countries to vaccinate their citizens. Flu experts warned that, by the time a vaccine arrives, it might be too late to stop the wave of disease, especially since it was highly transmissible ('catchy'). The hurry to develop vaccines, said a *Lancet* editorial, "means that a vaccine might be licensed without the usual safety and efficacy data requirements." Try-outs would be very limited. The US Food and Drug Administration approved four H1N1 vaccines and confirmed that "a robust immune response was seen after a single dose." How was this known? It was "measured by serological responses as a surrogate for vaccine efficacy." Huh? They look at the quantity and quality of antibodies or clumping of red blood cells once people are injected with an experimental vaccine. If a pre-set measurement is met the vaccine is considered "protective." The question is how these laboratory markers relate to actual flu protection. Many vaccinated people can still get the flu. Real outcomes are rarely looked at. With H1N1, antibody levels were often lower than expected. This was explained by a possibility of previous "subclinical" infection or because the virus was different from others.

The October 10, 2009 *Lancet* reported: "H1N1 influenza has been good for drug-company coffers. Three major pharmaceutical firms—Johnson & Johnson, Abbott Laboratories, and Merck & Co—have just announced massive H1N1 vaccine deals in what experts say is a strategic move." Some scientists and a large number of people questioned the safety and the effectiveness of the H1N1 vaccine. The vaccine was not put through rigorous testing to demonstrate safety or effectiveness. There was concern about ingredients (including mercury) and biological materials capable of causing problems. Once people became aware of the mildness of this 'pandemic' and of the facts and potential dangers of the vaccine, many opted not to get vaccinated. Healthcare workers were especially reluctant about getting vaccinated. Millions of doses of the vaccine remained to be sold. Publicity campaigns sprang up to encourage the public to get their vaccines. The US government spent $1.8 billion to put the vaccines into production. Were they effective in preventing death and hospitalization?

When such concerns were directed to the CDC, their reply was that no decision has been made to study these issues. It turns out that people who got the vaccine were no better off than those who did not. Hundreds of thousands of children were given one type of H1N1 vaccine that was recalled because it was found to be weak and useless. Yet children who received the recalled (useless) vaccine did not have more incidence of flu than those who received a full-strength vaccine. [8] Is there anything else we can do to help prevent or treat flu? The next issue will search this question.

For support to the immune and respiratory systems in order to help keep the body healthy during flu season, the following can be considered:

Upon arising:
4 Calcium Lactate

Just before two meals:
2 Allerplex
2 Cataplex C –chew
1 Organic Minerals –chew

After two meals:
3 SP Cleanse
1 Tuna Omega-3 Oil Chewable
1 Garlic capsule

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Nutrition *News and Views*

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WHAT'S TRUE ABOUT FLU? Part 2

By Judith A. DeCava, CNC, LNC

Medically, illness is often viewed as war. The best weapon to prevent influenza, we're told, is the flu vaccine. The updated recommendation from the Centers for Disease Control (CDC) is that **everyone** over 6 months of age should get a flu vaccine. In it you get a tiny amount of a flu virus on the premise that your body will make antibodies to that virus to "neutralize" it. If you're later exposed to that virus, you'll supposedly be able to combat (remember the war) it. But how well does this concept work? [1]

How effective are flu vaccines? The vaccine formula changes each year. Usually in the spring, three flu strains are chosen based on guesswork, flu outbreaks in Asia, and recommendations of the World Health Organization. The guess is frequently wrong. Researchers divide flu into two types. One is blamed on influenza A or B viruses which afflict fewer than 15% of people who appear to have flu. The flu vaccine applies to this type. All other forms of flu (85%) are referred to as *influenza-like illness*. Both types produce exactly the same symptoms. It's just that specific flu viruses can't be found in influenza-like illness. Vaccine researcher Tom Jefferson, MD, explains: "The flu is not caused by a single 'bug'—about one-third of all influenza is caused by an unknown agent; about one-third are caused by rhinoviruses, the same viruses that cause the common cold; and the remainder are a mixed bag of other agents including influenza A and B viruses and members of the coronavirus family." Anywhere from 150 to 200 viruses are implicated in causing the symptoms. What makes it really complicated, he says, is that they all appear to cause the same illness. What we see every year as flu may be caused by 200 to 300 different agents (viruses and others). A vaccine is offered against a few influenza A and/or B viruses, though no one can predict which strains of or how much A or B will be applicable. Since the A and B viruses account for only a small percentage (15%) of all flu-type cases, in no way can the vaccine prevent the type of flu that the vast majority of people get.

A systematic assessment conducted on all flu vaccine trials worldwide aimed to find out how effective flu vaccines are. The conclusion was that the vaccines appear to be somewhat effective in reducing influenza A and B but don't work against influenza-like illnesses. The same percentage of people suffered from influenza-like illnesses whether they were vaccinated or not. Altogether, only 6% fewer vaccinated people got flu compared to un-vaccinated people. The vaccines didn't reduce the number of working days lost; didn't reduce flu-related complications, deaths or hospitalizations; and failed to stop the spread of flu. In the last 20-plus years, the seasonal flu-related death rate has remained the same despite the fact that over these years more people have been getting vaccinated. Says Dr Tom Jefferson: "There is no evidence whatsoever that seasonal influenza vaccines have any effect, especially in the elderly and young children. No evidence of reduced [number of] cases, deaths, complications." Flu vaccines are especially recommended for the elderly but have performed very poorly. A September 2, 2008 *AMA Morning Rounds* headline read: "Researchers suggest influenza vaccine's effectiveness in elderly patients may have been exaggerated by earlier observational studies." The earlier studies seemed to show that vaccines were effective when they really were not. This was due to the "healthy-user" effect—people who get flu shots are more likely to be healthy and health-conscious to start with. It's their state of health that protects them from flu, not the vaccine. The flu shot doesn't reduce the risk of pneumonia, the most common complication of flu, in older people. A

study published in the *Cochrane Systematic Review* concluded: "Evidence for the safety and efficacy of influenza vaccines in the over 65s is poor, despite the fact that vaccination has been recommended for the prevention of influenza in older people for the past 40 years." In a study of adults below age 65, 67% of those vaccinated still came down with flu, as did children who were over six years of age. Flu vaccines are said to be effective in children older than 2 years, based on antibodies in the blood. But the vaccines don't reduce death, hospital admissions, serious complications, and transmission of flu. At best the vaccines provide minimal protection (measured by antibodies) to children and teens and are absolutely useless for children under 2 years. The February, 2010 *Cochrane Database of Systematic Reviews* shows that flu vaccines keep coming up short. Dr Roger Thomas explained that what troubled the researchers was that the vaccines had no effect on laboratory-confirmed flu. They looked for proof of reductions in flu, pneumonia, and deaths from pneumonia. They didn't find any of these. An early 2010 study implicated the 2008 flu vaccine in causing an increase of risk for the 2009 H1N1 swine flu. Overall, the data does not support promotion of flu vaccines. [2]

But flu vaccines are totally safe, right? There are pitifully few studies on safety. Adverse event reporting is done for only 2 to 14 days after the vaccine is administered (and it's voluntary), whereas bad effects may occur later. Side effects are usually minor such as swelling at the injection site (if a shot is used), fever, headache, rash, painful joints, fatigue, and hives. Rarely, seizures occur. People with allergies to eggs should not get the shot because it's made in fertilized chicken eggs. Children, particularly those with asthma, receiving a flu vaccine are three times more likely to end up in a hospital than those who don't get the vaccine. The safety of the flu shot in young children "has not been adequately studied in large populations," according to a report in the *Journal of the American Medical Association*. At least two studies found a small but significantly increased risk for Guillain-Barre syndrome in people getting flu vaccines. It usually begins two to four weeks after vaccination and can cause temporary paralysis as well as permanent residual disability.

There are two types of flu vaccines: live-virus nasal spray and dead-virus injectable vaccine. The live ('weakened') virus spray is not recommended for people with immune problems or chronic illness. It can cause any and all symptoms of flu. The dead virus vaccine contains preservatives and other additives. These can include ethylene glycol (antifreeze), phenol (carbolic acid, used as a disinfectant and a dye), formaldehyde (a known cancer-causing agent), aluminum (associated with Alzhemier's disease and seizures, produces cancer in lab mice), neomycin or streptomycin (antibiotics that can cause allergic reaction in some), and thimerosal (a mercury preservative). Mercury is implicated in autoimmune diseases and almost any neurological problem. A doctor who worked for many years in labs of major pharmaceutical companies and the National Institutes of Health is now speaking out, using a pseudonym (Dr Mark Randall) for protection. As far as he's concerned, all vaccines are dangerous. For one thing, they involve the immune system "in a process that tends to compromise immunity." The premise is that vaccines stimulate the immune system to create conditions for immunity from disease. But it doesn't work that way, he says. A vaccine is supposed to create antibodies to protect against illness. "However, the immune system is much larger and more involved than antibodies and their related 'killer' cells." The immune system is the "entire body, really." That's why some people stay healthy when others around them become sick. Dr Tom Jefferson says "there is no knowledge whatsoever that these vaccines are safe." [3]

Maybe antiviral drugs would be better. The two FDA-approved antiviral drugs, Tamiflu (oseltamivir) and Relenza (zanamivir), supposedly prevent flu virus from spreading to cells by blocking the action of neuraminidase, an enzyme involved in virus replication. Neither drug has shown any real preventive

effect against influenza-like illnesses (to which the vast majority of flu cases are attributed). Plus the drugs don't appear to reduce complications of types A or B flu. At best they may reduce the duration of flu by only one or two days if taken within 48 hours of initial symptoms. A review of all relevant studies concluded that the drugs had "low effectiveness." They don't reduce the rate of pneumonia, the reason for most flu-related deaths. Researchers in a joint investigation published in the *British Medical Journal,* December 8, 2009, declared they "have no confidence in claims that [Tamiflu] reduces the risk of complications and hospital admission in people with influenza." It should not be used for routine control of seasonal flu. Type A and type B flu strains around the globe are now being found to be resistant to Tamiflu. Sidney Wolfe, MD, refers to Tamiflu as "Scamiflu."

There are also side effects. Nausea, vomiting, and retching are common. Neuropsychiatric reactions and behavioral abnormalities—such as confusion, hallucinations, delusions, aggression, delirium, panic attacks, suicidal thoughts, and others—are rare but do occur, especially in children and teens. People have engaged in dangerous behaviors resulting in injury or death. Convulsions, serious skin reactions, vertigo, anaphylactic shock, and bronchitis are possible. Relenza is linked to breathing difficulties in people with asthma and chronic obstructive lung disease. There have been a few cases of a life-threatening condition called Stevens-Johnson syndrome which causes skin-cell death, fever, and lesions of oral, eye, and vaginal mucous membranes. In 2009 Oxford researchers said children should not be given Tamiflu or Relenza for swine flu. The only benefit is relief of symptoms a half to one day earlier. "The downside of the harms," says Dr Carl Heneghan, "outweigh the one-day reduction in symptomatic benefits." More than half of children taking Tamiflu have side effects such as nausea, insomnia, and nightmares. Side effects raise doubts about pregnant women taking the drugs.

What about other drugs? One dose of decongestant decreases symptoms by a mere 13% compared to placebo. Continued use for several days is no better than placebo. Antihistamines are even less effective; they may reduce a runny nose and sneezing, but have a minimal effect on other symptoms. Cough suppressants show no efficacy in suppressing coughs. Nasal sprays can cause a rebound effect, producing worse nasal congestion. Non-steroidal anti-inflammatory drugs (like aspirin and ibuprofen) relieve some aches and pains but also reduce fever and otherwise interfere with the natural process of inflammation and repair. Reducing fever by either acetaminophen (Tylenol) or aspirin can increase nasal symptoms and prolong the duration of a cold or flu. All the drugs have side effects. [4]

Is there anything we can do? Outbreaks of flu are not triggered by blind forces out of our control. We have a lot to do with the odds of flu affecting us and its severity if we are affected. The presence of a virus may or may not mean anything. I even wonder if a virus is a cause of a result. If exposure to a virus were the only factor to getting flu, then all of us would get sick every time we're exposed. But only 5% to 20% of people become sick. Susceptibility is more important than exposure. Susceptibility has more to do with basic health and is influenced by a number of things. People with a chronic illness (heart disease, diabetes, asthma, kidney disease, etc.) or who are taking medications (NSAIDs, steroids, immune-suppressing drugs, etc.) that can compromise the immune system, or who smoke are all more susceptible. Poor nutrition, lack of exercise, and stress (psychological, chemical, physical) have been shown to play significant roles. The ability of stress to affect immune function has long been recognized; nutritional status can be involved in this. General cleanliness is a good thing, yet some exposure to "germs" (like bacteria, viruses, fungi) every day may be more of a help than a hitch. Immunologist Mary Ruebush, PhD, says, "It keeps your immune cells, which are there to protect you, multiplying and reproducing." Scientists are learning that the way we live our lives can affect whether we succumb to illness. They are discovering that the immune system is more complex than

originally thought, and that it entails the whole body. Research is altering the view of science towards viruses. Rather than being seen as only agents of illness and death, a more productive light is being shown. Viruses are found to be major drivers of nutrient and energy cycles on our earth. If viruses are taken out of seawater, for example, things stop growing. Obviously, we have more to learn.

Once the immune system is alerted to any damage, toxin or foreign substance, the inflammation process naturally comes into play. It involves activation of various substances and cells to sequester the affected area, eliminate dead or damaged cells, and construct a matrix for new cells. This work results in elevated temperature, increased blood flow, mucus production, some discomfort, and energy diversion—symptoms of repair. But we've been taught to demand that symptoms should be instantly knocked out. Why wait a week or two for our bodies to get better on their own? Why extend effort to aid our bodies and the process of inflammation and repair? Perhaps because our goal should be to help our bodies heal rather than interfering or stopping stages of inflammation and repair. Perhaps because we don't want poor health to promote chronic inflammation wherein the weakened body keeps trying, but its efforts are thwarted, setting the stage for increased susceptibility and more damage. Symptoms are viewed as a nuisance, so symptom relief is the common rationale. Yet a review of flu symptoms' mechanisms headed by Ron Eccles, MD, showed that some symptoms are "an integral part" of the body's initial response and "may aid in recovery" from illness. The symptoms are signs of the body's attempts to overcome the illness, so "it is debatable whether elimination of these symptoms" with drugs is beneficial. Instead, give the body what it needs, such as natural, nutrient-dense foods. Conversely, eating lots of refined sugars in beverages, snacks and desserts, eating other processed nonfoods, consuming foods laden with artificial chemicals, pesticides, or drug residues, eating altered or fake fats—all these can stress your immune system, create inflammation due to their offense on the body, and set you up to become ill. Refined sugar has been shown to suppress the immune system by reducing white blood cells dramatically (up to 50%) for hours. Toxic-chemical exposure and food intolerances or allergies are stressful. Various drugs suppress the immune system including aspirin, ibuprofen, and antibiotics. [5]

What can we do nutritionally? The key to averting flu is a strong immune system. The immune system extends beyond the thymus, spleen, lymph nodes, and bone marrow. There's immune activity in the liver, gastrointestinal tract, tonsils and adenoids, mucous membranes lining the respiratory tract, skin, and more. White blood cells, chemical messengers that coordinate processes, the endocrine system, and nervous system all participate. Numerous nutrients and real foods have demonstrated the ability to support the immune system and inflammation/repair processes. For example, vegetables and fruits (from spinach and carrots to oranges and berries) are full of nutrients and phytochemicals to keep cells healthy and support healing. Separated or manufactured nutrients can't duplicate the symphony of action that only whole foods supply.

Vitamin A complex can reduce the incidence and severity of flu. It enhances the integrity of mucous membranes which line the respiratory tract, increases immune function and the ability of white blood cells to engulf and usher out dead or damaged cells. **B-complex** vitamins including B_2, B_6, B_{12}, folic acid, and pantothenic acid (B_5) support immune actions and help us deal with stress. A deficiency of B vitamins is associated with poorer immune response and poor production of some white blood cells. **Vitamin C** is probably the best known immune-system enhancer nutrient. Yet taking large doses of ascorbic acid (so-called vitamin C) doesn't prevent or cure a cold or flu; it works more as an antihistamine with drug-like effects. Immune benefits come from the whole vitamin C complex. **Vitamin D** modulates and regulates immunity; it is required to produce natural killer cells and activate

T-cells. It's been suggested that relatively low vitamin D states during winter months may explain the higher incidence of flu in winter. Yet flu can appear at any time, even in tropical areas with plenty of sun. So vitamin D is not the only nutrient needed. Low vitamin D status is linked to increased odds of getting colds and flu. Supplementing with vitamin D may reduce the incidence and complications of flu. Reasonable exposure to natural sunlight triggers formation of vitamin D. Fatty fish are good food sources. **Vitamin E** complex may help decrease susceptibility to flu and support tissue repair. **Selenium**, part of the vitamin E complex, when deficient has been associated with lowered immune capacity; it's needed to improve production of some white blood cells and cellular responses. Science has been learning that **vitamin K** is needed for a healthy immune system.

Coenzyme Q10 (ubiquinone) works with other nutrients to aid immune deficiencies. **Quercetin** has protective effects against flu. A deficiency of **zinc** may decrease cell-mediated immunity and function of the thymus, as well as lower concentrations of certain white blood cells. Zinc works with other nutrients (especially vitamin A) to benefit immune function. Zinc lozenges or sprays don't appear to work as well as consuming zinc-containing foods or food concentrates. **Calcium** plays a starring role in the inflammation and repair process. Since fever can indicate the body's demand for free calcium to deal with insult or injury to tissues, suppressing fever with a drug will, according to Dr Alan Fowler, prolong influenza. Calcium supplementation can resolve fever by supplying needed free calcium without sabotaging the inflammation and repair processes. **Magnesium**, **copper** and **iron** are also needed for good immune function. **Probiotics** are technically not nutrients, but are important to improve immune function and responses, reducing symptoms and duration of flu. Improving and maintaining a good bacterial flora in the GI tract is vital to producing some nutrients, making immune system components, and ridding the body of toxins. Antibiotics (especially broad-spectrum forms) can permanently alter the types and amounts of beneficial bacteria in the body. Fermented foods (non-pasteurized) or quality pre/probiotic supplements can be very helpful. A biologically active supplement made from fermented nutritional yeast (EpiCor) was shown to reduce the incidence of colds or flu-like symptoms. Increasing **glutathione** levels with properly-processed whey powder, a good source of amino acids, can help build a strong immune system and aid the body's ability to get rid of toxins and wastes. Glutathione is involved in recycling vitamins A, C, and E and producing white blood cells. It's also found in cruciferous vegetables such as cabbage, kale, broccoli, watercress, cauliflower, etc. Selenium helps increase glutathione levels. **Omega-3** fatty acids increase lymphocyte proliferation and are modulators of immune function. Fish oil has been found to reduce the occurrence of illnesses like colds and flu as well as shorten the duration if they do occur.

Herbs act as inflammation and immune modulators. *Echinacea* may aid in preventing flu and can relieve symptoms, limit duration of colds and flu, and support the body's efforts to heal. Fresh raw *garlic* or dried garlic supplements contain immune-boosting substances that can assist in avoiding colds and flu as well as recovering from them more quickly. European *elderberry* may cut the length of a bout of flu in half and lessen its severity. *Astragalus* and several types of *mushrooms* (like reishi, shiitake, maitake, and cordyceps) are tonics that may assist in warding off the flu, promote balance, and tone the immune system. *Slippery elm* and *marshmallow* root can soothe sore throats and alleviate coughs. *Mullein* increases respiratory fluids, relieving irritation of mucous membrane tissues and promoting clearance of mucus. *Wild cherry* bark and *licorice* may reduce coughing. *Turmeric* is a traditional remedy for flu and flu-like respiratory illnesses. *Ginger* helps to resolve fevers and reduce muscle soreness. *Andrographis* and *eleuthero* in combination may be a promising treatment for alleviating symptoms of colds and flu. Drinking plenty of **fluids**—clean water, herb teas, freshly-made juices, soups like traditional chicken soup—should be part of treating flu naturally. **Sleep**-deprived

people produce fewer white blood cells and experience more stress. Being run-down makes you more susceptible to illness. Regular **exercise** keeps all systems working, including the immune system, and is linked to a reduced risk for colds and flu. The **sweat** bath (sauna, hot tub, and the like) has been used for centuries to treat colds and flu. [6] For an individual with flu, the following may be considered:

Upon arising and at bedtime:
4 Min-Tran

Just before two meals:
2 Tuna Omega-3 Chewable – chew
1Epimune Complex
1 Fen-Gre

Every three waking hours: *
2 Cataplex C or Echinacea-C – chew
1 Pneumotrophin PMG – chew
1 Desiccated Adrenal – chew
1 Thymex – chew

* When symptoms abate, reduce to 3 times per day and continue for several days after symptoms gone.

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